

**AMENDMENTS TO THE CLAIMS:**

The following listing of claims will replace all prior versions and listings of claims in the application:

**LISTING OF CLAIMS:**

Claims 1-274. Canceled.

Claim 275. (Currently Amended) A method of producing a library comprised of chimerized, [[but]] defined polynucleotide sequences each of which is comprised of a defined number of polynucleotide segments that are assembled in an ordered fashion, the method comprising:

a) generating a plurality of defined polynucleotide segments [[of]]  
selected from aligned substrate nucleic acid sequences,  
wherein said substrate nucleic acids encode full-length enzymes,  
and wherein ~~borders~~ boundaries defining the polynucleotide segments  
are selected ~~by aligning the~~ from the aligned substrate nucleic acid  
sequences; and

b) reassembling said defined polynucleotide segments in order  
thereby producing the library of chimerized, [[but]] defined polynucleotide  
sequences, such that said segments are reassembled in an ordered fashion to  
produce each chimerized, [[but]] defined polynucleotide sequence  
encoding a full-length enzyme, each of which is comprised of a defined  
number of polynucleotide segments that are reassembled in an ordered  
fashion.